

January 18, 1962

Mr. John W. Wentworth
Manager, Educational Electronics
Radio Corporation of America
Camden 2, New Jersey

Dear John:

Thank you for your note explaining your inability to help us underwrite the cost of a Director of Development to head up the ETV promotional drive. I quite understand your position and appreciate your taking the trouble to explain the situation.

I am devoting the next four months almost exclusively to seeking funds for the maintenance and expansion of our services and if I meet with any success, it may still be possible to set up a position along the lines that we have discussed. I appreciate your past help and will be glad to count on your continuing sympathetic interest in our activities. It may well be that we can call upon the talents of yourself and your staff from time to time.

Cordially yours,

William G. Harley

WGH:ckn

Handwritten: H/W noted w/ regret, but not surprise.
7/19
return

RADIO CORPORATION OF AMERICA
INDUSTRIAL ELECTRONIC PRODUCTS
CAMDEN 8, NEW JERSEY



January 16, 1962

Mr. William G. Harley
President
National Association of
Educational Broadcasters
1346 Connecticut Avenue
Washington 6, D.C.

Dear Bill:

It is time that I gave you some indication as to where we stand on the possibility of helping NAEB underwrite the cost of adding a Director of Development to its staff along the lines we discussed prior to the NAEB Convention last October.

While I encountered some interest when I "sounded out" several of my industrial acquaintances about the possibility of making the support of the NAEB Director of Development an Industrial Associates project, it was quite apparent that a relatively "hard sell" effort would be required to push the several companies involved to the point of making a commitment. While we all have high regard for NAEB, we all also operate on relatively limited promotion budgets. I also noted considerable concern about the precedent involved; an initial contribution by industry to launch a new staff service may lead to moral obligations to continue such contributions in subsequent years.

After the convention, I decided to postpone the "hard sell" activity needed to promote this project until such time as I had assurance that we at RCA would be prepared to do our share. I placed in my budget proposal for 1962 an item to cover what I considered our share of the \$25,000 that you estimated would be required to support the Director of Development. In the closing weeks of 1961, however, there were major revisions in the organizational structure of RCA, resulting from the resignation of Mr. Burns. Among the changes was the transfer of my Educational Electronics activity from the Broadcast Division to the RCA Service Company, which is now responsible for virtually all of the educational services offered by the Corporation. While I shall continue to operate essentially the same as in the past, my budget must be held at the 1961 level, and I see no way to stretch this budget to include a significant contribution to NAEB beyond our normal Industrial Associates assessment.

Mr. William G. Harley

- 2 -

January 16, 1962

In view of this development, I feel that I am in no position to engage in any further promotional activity of a money-raising nature with respect to the Director of Development project. I still feel, however, that NAEB is the logical group to "spearhead" the ETV movement, and would welcome opportunities to participate actively in its work. While my staff and I cannot serve as financial "angels", we may be able to contribute time or talents that will help the cause in which we all believe.

Sincerely yours,



John W. Wentworth
Manager,
Educational Electronics

JWW/scc

May 25, 1961

Mr. Carl H. Madden
Dean
College of Business Administration
Lehigh University
Bethlehem, Pennsylvania

Dear Mr. Madden:

In regard to your letter of May 20, 1961 referring to your recent correspondence with Mr. John L. Burns, President of RCA, please be advised that Mr. William G. Harley is out of the country at this time, and will be returning to Washington in early June.

Upon his return, Mr. Harley will be able to give you suggestions and assistance in your cooperative local effort being organized in connection with educational TV facilities at Lehigh University, and his ideas on a "broad-gauge committee" program.

Sincerely yours,

Mary Elizabeth McIlvane
Administrative Assistant

MEM:rkf

COLLEGE OF BUSINESS ADMINISTRATION
OFFICE OF THE DEAN

REC'D
NAEB HEADQUARTERS

MAY 23 1961

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7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3

In this connection, you are aware that Lehigh University has no educational TV facilities. I am, frankly, concerned about this situation and am hoping that, through cooperative local effort now being organized, it will be possible to move aggressively to gain facilities here. I am sure that you could give me and Lehigh helpful suggestions and assistance in this matter, as I believe that I could give you helpful assistance in generating important support for a much broader national effort in the educational TV area.

May 20, 1961

I do hope to hear favorably from you and to gain the opportunity to be of service in such a vital area.

Yours sincerely,

Carl H. Madden

Carl H. Madden
Dean

CHM/pmb

WGH
Tour cc.
HGH
10/9/61

October 9, 1961

Mr. John W. Wentworth
Manager
Educational Electronics
Radio Corporation of America
Camden 2, New Jersey

Dear John:

Sorry to be so late with this.

Perhaps this is much longer than you want, but I thought maybe we should include some rationale. As you see, I borrowed heavily from your memo.

You may have some other notions as to the most effective way to organize the material, so feel free to change as you see fit. You know the "intended audience" better than I.

Cordially,

William G. Harley
President

WGH/mlm
cc: Mr. Carleton Smith

September 29, 1961

Mr. Duff Brown
c/o W.W. Flanigan
7515 S.W. 79th Crt.
Miami 43, Florida

Dear Duff:

So I calls up the V.P. of RCA and I says I have an able young man in mind for that job we've been drumming--I have him now but, not necessarily for long; hence, we'd best get crackin'. He agreed.

Three days later John Wentworth, in charge of educational services for RCA, calls and says he's been directed to contact me and understands I have somebody in mind. He says there's a new possibility for raising funds--the Electronics Industry Association, hwhich has underwritten a number of educational projects, i.e., Phil Leurs' book on TV equipment. If this doesn't work out, says he, then he will undertake to raise the money from among NAEB's industrial associates. The former way, he slyly pointed out, would involve people who are not presently in the membership.

All this, Duff, adds up merely to the fact that things are moving but without spectacular celerity. All I can do for the moment, then, is say that there is still the possibility of a job here, but, as yet it is not a reality. Meanwhile, do you have a resume or collection of fibs about yourself that I can employ to bamboozle some unwary manufacturers? If not, please dream one up and send it along.

Best regards,

William G. Harley

WGH/mmm'

RADIO CORPORATION OF AMERICA
INDUSTRIAL ELECTRONIC PRODUCTS
CAMDEN 2, NEW JERSEY



July 24, 1961

RECEIVED
NAEB HEADQUARTERS

JUL 25 1961

AM 7/8/9/10/11/12/1/2/3/4/5/6 PM

Mr. William G. Harley,
National Association of Educational
Broadcasters,
1119 DuPont Circle Office Building,
1346 Connecticut Avenue, N.W.,
Washington 6, D.C.

Dear Bill:

I am returning herewith the copy of the NAEB proposal to the Ford Foundation that you lent me in South Carolina. I found it very helpful in providing further insight to the kinds of activities NAEB would like to undertake if financial support were available. I appreciate, of course, the problems which account for the fact that only a small fraction of this "master plan" has actually been put into practice.

For the next two or three weeks I must concentrate on several business obligations that have accumulated during my recent travels, but by late August I expect to have further time to devote to the long-range planning we have discussed in our recent conversations. I hope that we (at RCA) shall be able to find effective channels for active cooperation with NAEB toward our common objectives.

With best regards,

John W. Wentworth
Manager,
Educational Electronics

JWW/scc



news

RADIO CORPORATION OF AMERICA • 30 ROCKEFELLER PLAZA • NEW YORK 20, N.Y.

COLUMBUS 5-5900

for release: P.M. Papers Friday, April 28, 1961

RCA PRESIDENT SAYS \$2½ BILLION EDUCATIONAL TELEVISION PROJECT
NEEDED TO SOLVE NATION'S BASIC EDUCATION PROBLEM IN A DECADE

John L. Burns Tells Ohio State Institute That Overall Approach
Is Needed to Alter ETV's "Fragmentized Character," Move Its
Electronic Signals into Classrooms from Coast to Coast,
And Link Its Varied Elements in Planned Growth Program;
Advantages for the Developing Nations Also Noted;
Five-Point Program of Action Outlined

COLUMBUS, Ohio, April 28 -- President John L. Burns of
the Radio Corporation of America today proposed a \$2½ billion
nationwide educational television project which, he said, could
"solve our basic national education problem within a decade."

Addressing a luncheon of the National Association of
Educational Broadcasters, held in conjunction with Ohio State
University's Institute for Education by Radio-TV, he said
instructional television's ultimate promise can be realized only
from an "overall approach." The major need, he said, is "to alter

educational television's fragmentized character, to move its electronic signals into classrooms from coast to coast, to link its varied elements in a planned program of growth."

Mr. Burns said that despite the "impressive" advances made during educational television's first eight years, only 2 per cent of America's students are now getting any "significant portion" of their education from the picture tube. At the present growth rate, he went on, "educational TV will not be the primary instrument of instruction until the year 2,360 -- when our great, great, great grandchildren are enrolling in the first grade!"

Describing his proposed \$2½ billion program as "one of the most prudent investments we, as a nation, could make," Mr. Burns said it would offer "our best hope -- and surely our most realistic one -- for achieving a substantial upgrading of educational quality on a short-run basis and at a cost we could afford. "

He said such an investment would buy:

Another 150 ETV stations giving us a nation-wide educational network comparable to our nation-wide commercial networks. Approximate Cost: \$100 million.

Branching closed-circuit systems for all schools in the United States. Approximate Cost: \$900 million.

Studios and television tape centers for originating programs for these closed-circuit systems.

Approximate Cost: \$900 million

Television receivers for our million-and-a-quarter classrooms.

Approximate Cost: \$600 million.

Meeting of Three Major Needs Foreseen

The RCA President said that with facilities of this magnitude, the nation could meet its "three most imperative needs in educational television today."

"First," he said, "we could forge a stronger union of the teaching, broadcasting and graphic arts."

"With a program of the scope I have suggested, we could select the best teachers available and support them with the most effective aural and visual techniques. By combining the most venturesome concepts of educators, broadcasters and graphic arts specialists, we could develop more stimulating presentations in every subject from arithmetic to zoology. And we could make these presentations available promptly to teachers' colleges and other educational groups, thus starting a chain reaction of teaching excellence. We need training schools for television teachers just as we need dramatic schools for actors and actresses."

Tape-and-Film Libraries Envisaged

"The second thing we could accomplish with our \$2½ billion investment would be to establish in every state comprehensive libraries of television tapes and films by standout teachers."

"Through an exchange system, each school in a particular area could contribute to one of these libraries and share its program material. The school with a talented arithmetic teacher could commit her presentations to tape and distribute them widely; the one with a well-appointed physics or chemistry laboratory could make its demonstrations available to hundreds of others; the one with a

gifted music and art faculty could supply those unable to afford their own specialists.

"The third accomplishment from our \$2½ billion investment would be the development of state-wide, region-wide and nation-wide educational television systems.

"Those systems would function through open circuits, closed circuits, economical television tape machines, and various combinations of these elements. Although no rigid priority system is necessary, the open-circuit broadcasts, it seems to me, should come first because they would serve to showcase the virtues of televised education to the community in the most eloquent manner possible. Concurrently, in many places, would come the closed-circuit systems and tape machines which would form the ultimate hard core of instructional facilities, bringing the advantages of multiple-channel television to every classroom in the nation."

Mr. Burns, a former teacher at Harvard and Lehigh, said these three accomplishments would "solve our basic national education problem within a decade," and added that it is against the backdrop of this probability that the cost of \$2½ billion should be evaluated. He said it would represent 13 per cent of one year's national education budget.

"To raise such a sum," he said, "a supreme effort will be required by every element involved in education -- Federal, State and Local Governments, Foundations, Business and Industry, and other private sources. It will not be easy, any more than the shift from planes to missiles was easy in a military sense. But it will be just as significant to education as missilery is to security."

TV's Potentialities in the Developing Nations

Mr. Burns said the success or failure of educational television in the United States will have "profound implications" throughout the world, particularly in the developing areas of Asia and Africa.

"A significant beginning in these areas might be made," he said, "by providing rudimentary and inexpensive phonograph records and radios, perhaps as part of our foreign aid program. In this way, sound alone might be used at the start, possibly supplemented with slide projectors in some cases. Then, as the idea of electronic teaching aids achieves acceptance, television might be introduced on a gradual basis.

"Imagine the strides that could have been made toward stamping out illiteracy in the past decade if we had spent on electronic educational tools just one per cent of the \$36 billion we spent on military aid."

Five-Point Program Outlined

The RCA President said full realization of educational TV's potential can be moved from the Twenty-Fourth to the Twentieth Century, if prompt and decisive action is taken.

"Specifically," he said, "I propose that the National Association of Educational Broadcasters take the initiative in setting up a Steering Committee comprised of leaders in the fields of Education, Broadcasting, Business and Industry, and Government. This Committee should then:

"1. Draw up a national plan for the comprehensive development of educational television.

"2. Prepare detailed budget proposals for large-scale public and private financing.

"3. Establish general timetables for the build-up of open-circuit and closed-circuit systems, plus tape-and-film libraries.

"4. Seek to enlist the wholehearted support of the Department of Health, Education and Welfare, the Foundations, and other interested principals.

"5. Mount a massive informational campaign to persuade every American that failure to support this effort will mean the forfeiture of our children's educational heritage."

...O...

RADIO CORPORATION OF AMERICA

INDUSTRIAL ELECTRONIC PRODUCTS

GARDEN STATE, NEW JERSEY



July 18, 1961

Mr. William G. Harley,
National Association of Educational
Broadcasters,
1119 DuPont Circle Office Building,
1346 Connecticut Avenue, N.W.,
Washington 6, D.C.

Dear Bill:

Enclosed is a copy of the notes I prepared prior to our conference on Friday, July 7, modified slightly in accordance with some of the discussion at the meeting. Although they are not exactly the same as "minutes" of the meeting, they may be helpful as a summary of the problems we face in trying to implement Mr. Burns "blueprint" for the further development of ETV.

I enjoyed the stimulating discussion at our meeting, and will continue my personal efforts to help NAEB to make significant progress toward realizing the full potential of ETV. I expect to be in touch with you again within a few weeks.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "John".

John W. Wentworth
Manager,
Educational Electronics

JWW/scc

NOTES ON THE EXPANSION OF EDUCATIONAL TELEVISION

Prepared by: John W. Wentworth
Manager
Educational Electronics
Radio Corporation of America
Camden, N.J.

For: An Informal Conference of NAEB Officers
Held in Washington, D.C. on
July 7, 1961

OBJECTIVES:

The efforts to expand the level of activity in ETV should:

1. Make available to every family in the United States a source of non-commercial educational and cultural programs.
2. Make available to every school and classroom in the United States a source of instructional programs of high quality.
3. Provide for the establishment and maintenance of high professional standards in educational television with respect to both content and technique.
4. Establish a sound economic foundation for ETV, not dependent upon philanthropy or nonrecurring government grants.
5. Result in the establishment of program and course libraries extensive enough to give freedom of choice to curriculum planners utilizing ETV.

BASIC PREMISES OR ASSUMPTIONS ON WHICH TO BASE PLANNING EFFORTS

1. Instructional programs directed to classrooms will provide the major justification for the costs involved in ETV, although services to individuals and families are also important.
2. The content and scheduling of ETV programs should be controlled by educationally-oriented people, not politicians, non-educational civil servants, engineers, or businessmen.

3. The American traditions of local expression and local control of education should be preserved in ETV without precluding the development of regional or national programs where appropriate. A corollary premise is that major financial support for ETV must be derived from local, state, and regional sources.
4. Broadcast transmission and closed-circuit transmission deserve equal status as alternative means of distributing ETV signals. Depending upon circumstances, the open-circuit and closed-circuit techniques may be used singly or in combination.
5. In view of the extensive educational research already completed, there is no longer any justification for regarding ETV as experimental - the effectiveness of television as an instructional medium has been adequately proved.
6. When ETV is employed on a reasonably intensive scale, the economic factors compare favorably with the costs of conventional instruction.

FACTORS LIMITING THE EXPANSION OF ETV (OBSTACLES TO BE OVERCOME)

1. Educational conservatism, based partly on:
 - (a) Lack of good information.
 - (b) Fear of technological unemployment.
 - (c) Resistance to changes in work patterns and organizational patterns.
 - (d) Fear of exposure of poor teaching, or fear of competition among teachers.
 - (e) Misconceptions, especially in reference to "de-humanizing" the educational process.
 - (f) "Flight from decision" - unwillingness to face up to educational problems.
2. Lack of awareness on the part of the lay public as to the status and potential of ETV.
3. Lack of teacher training (or re-training).
4. Requirement for an initial capital accumulation.

5. In some areas, local school systems are not large enough as economic units to operate ETV facilities economically on an independent basis.
6. Scarcity of competent technical and production personnel.
7. Lack of a strong professional organization to guide the overall development of ETV. (NAEB has the competence, but not the financial resources, to do the job).

POSSIBLE APPROACHES

1. Form a "prestige" committee (along the lines of Mr. Burns' proposal) headed by a well-known and respected personality with professional competence and ample time to devote to the task. This committee would draw up and promote a national plan for the development of ETV.
2. Convene a "White House Conference on Educational Television" to focus public attention on the problem and evaluate possible plans.
3. Launch a major promotional campaign (possibly through the Public Service Advertising Council) to take the story of ETV to the general public (and hence to local school boards). This campaign would probably involve preparation of a very good brochure and appropriate ads to be placed in all media to announce its availability. The campaign might also include planned efforts to prepare and place appropriate articles in such periodicals as Parent-Teacher, Saturday Review, Saturday Evening Post, etc.
4. Continue to support and promote Federal aid to ETV as an important first step in providing accumulations of capital.
5. Form an "Industry for ETV" committee to enlist the support (and possible financial aid) of business and industry, including those corporations not directly related to either broadcasting or education. Appeals for support might be based on:
 - (a) Public relations value
 - (b) Education of tomorrow's workers and executives
 - (c) Continued training and re-training of today's workers, especially the unemployed and unemployable.
 - (d) Potential tax savings through greater efficiency in education.

Such a committee would need a definite assignment to justify its existence. Such an assignment might be the planning and control of a series of vocational training programs to be "tailored" to the needs of each economic region and transmitted for perhaps one hour each day over ETV facilities.

6. Appoint, under NAEB auspices, a series of "ad hoc" committees to explore and develop solutions for such problems as:
 - (a) Teacher training for ETV.
 - (b) A thorough analysis of the economics of ETV.
 - (c) Interim and permanent means for financing ETV.
 - (d) Regrouping of small school districts into economic units large enough to support local ETV.
 - (e) Development of technical standards and recommended equipment concepts for various levels of ETV activities.
 - (f) Establishment of tape and film libraries.
 - (g) Overall promotion of ETV.

CARLETON D. SMITH

October 18 1961

Mr Harley

RECEIVED
NAEB HEADQUARTERS

OCT 19 1961

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PM

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September 28, 1961

Honorable Farris Bryant
Governor of Florida
Tallahassee, Florida

Dear Farris:

I was delighted to receive your letter expressing your willingness to help the National Association of Educational Experimenters in its efforts to implement my proposal for educational television. I am sure that Bill Hurley, President of NAEAE, will respond to your offer eagerly.

Just two days ago, Caroline Smith, NAEAE's Washington Vice President, arranged a luncheon with your predecessor, Larry Collins, and Bill Hurley to explore ways of putting the educational television plan. I am informed that Governor Collins has agreed to bring up the subject at each of the eight regional meetings of the National Association of Governors. These will take place in the next month.

Because Caroline Smith has been working closely with both the NAEAE and the NAB I am forwarding his letter to you. I am sure he will take it up with both organizations and you will perhaps hear directly from them on ways in which your generous offer of assistance can best be utilized.

With cordial greetings,

Sincerely,

JLB

cc: Caroline D. Smith

STATE OF FLORIDA

Office of the Governor

TALLAHASSEE

September 30, 1961

Farris Bryant
Governor

Mr. John L. Burns, President
Radio Corporation of America
30 Rockefeller Plaza
New York 30, New York

Dear John:

I examined last night the summary of
NCA educational activities and services,
and read with greatest interest your
speech of April 25, 1961, "Educational
TV: A Blueprint for Action."

If the National Association of Educational
Broadcasters should move to act on your
proposal, I would love to help.

Sincerely,

/s/ Farris

Governor

FB/rf

Address by John L. Burns
President
Radio Corporation of America
At Institute for Education by Radio-TV
Ohio State University
Columbus, April 28, 1961

EDUCATIONAL TV: A BLUEPRINT FOR ACTION

I have written and talked so much about educational television lately that I feel a kinship with the Harvard psychologist who overheard a conversation among the white mice in his laboratory. The smartest and plumpest of the mice was boasting: "I've got this fellow so conditioned that all I have to do is press a button and he feeds me."

When my button was pressed for this speech, I experienced the same conditioned reflex of acceptance that the words educational television have always stirred in me. What we need is more, not less, talk about the promise of educational TV, and about the urgency of using it to solve our paramount national problem.

It is true that, in human terms, the growth in educational television's first eight years has its impressive aspects. Gifted students in small rural schools are taking college preparatory courses; classroom demonstrations are being enriched by treasures from art, science and history museums; the abstractions of higher mathematics are being brought to a nation-wide audience of early-risers; students are completing as much as two years of college in their living rooms; parents are tuning in to follow the daily lessons with their children.

It is also true that we have registered statistical progress. Our 56 educational stations can reach 70 million people; 150 closed-circuit systems operate in schools and colleges; 7, 500 schools use television for regular instruction; 250 colleges and universities give academic credit for televised courses; altogether, more than 4 million students receive part of their instruction by TV.

These figures indicate that we are out of the incubator -- but . no more than that.

Even after eight years, only 2 per cent of our students get any significant portion of their education from the picture tube. At the present growth rate, educational TV will not be the primary instrument of instruction until the year 2, 360 -- when our great, great, great grandchildren are enrolling in the first grade!

The real threat is that progress at this pace might dwindle into no progress at all. In Thornton Wilder's words, "every good and excellent thing . . . stands moment by moment on the razor-edge of danger." The increasing demands for new skills and higher scholarship, coupled with the growing shortages of teachers and facilities, give a surgical urgency to the nation's educational needs.

What must be done to alter educational television's fragmentized character, to move its electronic signals into classrooms from coast to coast, to link its varied elements in a planned program of growth?

Much has been written and spoken of educational television's bright promise in terms of individual experiments, but I believe its ultimate promise can be realized only from an overall approach, because the individual experiment is too small to show the way.

For this reason, my discussion today will be directed at outlining such an approach, estimating its cost, and suggesting possible steps to implement it. Perhaps with this as a background, some of the fertile minds in this room and elsewhere in education and broadcasting, can refine and improve my suggestions in order to bring the most urgent necessity of our times into being more quickly.

To get educational television off the ground, on a national scale, will require a massive injection of money, in the area of two-and-a-half billion dollars. It would be one of the most prudent investments we, as a nation, could make, because it would offer our best hope -- and surely our most realistic one -- for achieving a substantial upgrading of educational quality on a short-run basis and at a cost we could afford.

This \$2-1/2 billion investment would buy:

Another 150 ETV stations giving us a nation-wide educational network comparable to our nation-wide commercial networks. Approximate Cost: \$100 million.

Branching closed-circuit systems for all schools in the United States. Approximate Cost: \$900 million.

Studios and television tape centers for originating programs for these closed-circuit systems. Approximate Cost: \$900 million.

Television receivers for our million-and-a-quarter classrooms. Approximate Cost: \$600 million.

What could be accomplished, educationally, with facilities of this magnitude? We could meet our three most imperative needs in educational television today.

First, we could forge a stronger union of the teaching, broadcasting and graphic arts.

In many ETV experiments, the temptation has been to wheel a camera into a classroom and present a succession of teachers lecturing in front of gray drapes. The result can be, and often has been, worse than no television at all. An unimaginative teacher in one classroom is a misfortune for 35 or 40 pupils, but if you put him "on camera" you multiply the misfortune for hundreds or thousands of students.

With a program of the scope I have suggested, we could select the best teachers available and support them with the most effective aural and visual techniques. By combining the most venturesome concepts of educators, broadcasters and graphic arts specialists, we could develop more stimulating presentations in every subject from arithmetic to zoology. And we could make these presentations available promptly to teachers' colleges and other educational groups, thus starting a chain reaction of teaching excellence. We need training schools for television teachers just as we need dramatic schools for actors and actresses.

Shakespeare's schoolboy "creeping like a snail unwillingly to school" was a victim of poor teaching, but no power in his day could rescue him from this fate. Today, we can do something about the educational fate of 45 million American students.

Television, responsibly and creatively used, offers a matchless opportunity for introducing reality into the classroom, conveying the excitement inherent in the learning process, recapturing the spirit of scholarly adventure so well expressed by Erasmus who said: "When I get a little money, I buy books; and if any is left, I buy food and clothes."

The second thing we could accomplish with our \$2-1/2 billion investment would be to establish in every state comprehensive libraries of television tapes and films by standout teachers.

Through an exchange system, each school in a particular area could contribute to one of these libraries and share its program material. The school with a talented arithmetic teacher could commit her presentations to tape and distribute them widely; the one with a well-appointed physics or chemistry laboratory could make its demonstrations available to hundreds of others; the one with a gifted music and art faculty could supply those unable to afford their own specialists.

The TV tape equipment needed to translate this prospect into performance is already available. Only last month, simplified tape recorders, selling for roughly half the price of standard commercial broadcast equipment, were introduced, and there will be further technical advances and further economies in this equipment field. The new units already make control of originating facilities financially feasible even for moderate-size educational institutions.

For the schools, a tape-and-film exchange program would remove any excuse for 41 per cent failing to offer instruction in foreign languages, as is true today; or 36 per cent neglecting to provide a course in physics.

For the teacher, the system would permit him to concentrate on the activity for which he is best suited, whether it be lecturing to thousands of students or counseling the individual. On the basis of my own teaching experience, I am convinced that individual guidance is the most important aspect of teaching. With television, the hours spent in providing personal help could be multiplied many times; the general level of teachers' pay could be raised; and they could enjoy a greater measure of personal prestige. The teacher is the key figure in the educational process, and the element of human contact must always be supreme -- but the method is important, too, as the textbook has proven.

Technological unemployment would be no threat for qualified teachers because the demand has far outraced the supply. According to the Ford Foundation's Fund for the Advancement of Education, it would take half of all college graduates over a ten-year period to meet our need for new teachers, and obviously far less have been entering the profession. Many years ago, Charles W. Elliot observed: "The fear of losing one's job has kept education in America fifty years behind its possible improvement." This fear is as thoroughly unfounded today as it was then; and we must work energetically

to remove it as a psychological block against educational TV.

The third accomplishment from our \$2-1/2 billion investment would be the development of state-wide, region-wide, and nation-wide educational television systems.

Those systems would function through open circuits, closed circuits, economical television tape machines, and various combinations of these elements. Although no rigid priority system is necessary, the open-circuit broadcasts, it seems to me, should come first because they would serve to showcase the virtues of televised education to the community in the most eloquent manner possible. Concurrently, in many places, would come the closed-circuit systems and tape machines which would form the ultimate hard core of instructional facilities, bringing the advantages of multiple-channel television to every classroom in the nation.

The television tape machines would introduce a new flexibility into the curriculum, enabling schools to schedule demonstrations and other programs at the most convenient hours. Television tape would also permit major economies through the repeated use of outstanding presentations.

With all these elements functioning in concert, every community would be able to select the finest program material appropriate to its own needs. Far from imposing uniformity on local curriculums, these systems would impart a richness and variety often lacking in today's academic programs. They would serve elementary and secondary schools, colleges and universities, and even adult education classes.

I believe the three accomplishments I have outlined would solve our basic national education problem within a decade, and it is against the backdrop of this probability that the cost of \$2-1/2 billion should be evaluated. Today, education represents our largest single category of public spending next to national defense -- \$19 billion a year. What we are talking about for television facilities, then, is 13 per cent of one year's budget.

Nevertheless, to raise such a sum, a supreme effort will be required by every element involved in education -- Federal, State and Local Governments, Foundations, Business and Industry, and other private sources. It will not be easy, any more than the shift from planes to missiles was easy in a military sense. But it will be just as significant to education as missilery is to security.

Last year, more than half the money spent by states and localities on public-school education came from property taxes. In many communities, this tax base is approaching the saturation point; historically, as a revenue source, it has been unresponsive to increases in national income.

While elementary and secondary public-school enrollment has doubled since 1900, expenditures for it have gone up more than seventy-fold. Since 1950 alone, such expenditures have risen over 150 per cent.

With present instructional methods, school costs are likely to continue climbing along with enrollments. With television, the economic ground-rules can be drastically altered.

Experiment after experiment has shown that the larger the number of students viewing a program, the lower the per pupil cost. In one Midwestern area, 30,000 pupils in 1,000 different classes are being taught Spanish by an exceptionally talented teacher at a per-pupil cost of less than a penny a lesson. Directors of the Midwest Program on Airborne Television Instruction estimate that if 1,000,000 pupils use the program the first year, the cost of each child's televised education will be no more than \$2. Eventually, they hope to reduce the cost to 50 cents a child.

Our success or failure with educational television will have profound implications throughout the world. Our partners in the Western alliance are also faced with the problem of educating their children with too few teachers and too few classrooms. They, too, recognize the urgency of getting better results for lower per-pupil costs.

But formidable as the educational problems of the Western nations are, they are far outstripped by those of the developing areas of Asia and Africa. Scarcely half the world's 550 million school-age children are actually receiving any formal education, and the bulk of the educational have-nots are in this region.

A significant beginning in these areas might be made by providing rudimentary and inexpensive phonograph records and radios, perhaps as part of our foreign aid program. In this way, sound alone might be used

at the start, possibly supplemented with slide projectors in some cases. Then, as the idea of electronic teaching aids achieves acceptance, television might be introduced on a gradual basis.

Imagine the strides that could have been made toward stamping out illiteracy in the past decade if we had spent on electronic educational tools just one per cent of the \$36 billion we spent on military aid.

There are 700 million adults on our globe, one-fourth of the population, who neither read nor write. They never will, if we stick to conventional education methods. Their only fighting chance is through the spread of electronic techniques. On a broader canvas, these same techniques might also give all people, literate and illiterate, a fighting chance to live in peace. For, as Lord Attlee has said: "Since wars begin in the minds of men, it is in the minds of men that the defenses of peace must be constructed."

It is in the minds of men, too, that the campaign to upgrade our educational standards will be won -- or lost. For even in a world of power, the power of ideas remains supreme.

We -- you and I and all those involved in this field -- can move the full realization of educational TV from the Twenty-Fourth Century to the Twentieth if we act promptly and decisively.

Specifically, I propose that the National Association of Educational Broadcasters take the initiative in setting up a Steering Committee comprised of leaders in the fields of Education, Broadcasting, Business and Industry, and Government. This Committee should then:

1. Draw up a national plan for the comprehensive development of educational television.
2. Prepare detailed budget proposals for large-scale public and private financing.
3. Establish general timetables for the build-up of open-circuit and closed-circuit systems, plus tape-and-film libraries.
4. Seek to enlist the wholehearted support of the Department of Health, Education and Welfare, the Foundations, and other interested principals.
5. Mount a massive informational campaign to persuade every American that failure to support this effort will mean the forfeiture of our children's educational heritage.

Ours is a task of formidable proportions. It can be accomplished only if we pursue it with energy, intelligence and dedication. We must, all of us, keep pushing buttons everywhere -- and keep responding when our own buttons are pushed. Thank you.

~~Edwards~~

Points to include in development proposal

-- Based on challenge in Burns' speech and subsequent conferences with Burns, Smith and Wentworth.

-- While NAEB is obvious "guiding and coordinating" organization, the NAEB cannot, by itself, hope to develop and finance a program leading to the desired expansion of educational television.

-- To develop the funds and backing necessary for such large-scale efforts as are envisioned, the NAEB needs modest funds (approximately \$25,000 the first year) to hire a director of development whose task and function it would be to begin to rally the necessary support.

-- The director of development would work with a "prestige committee" (along the lines of Mr. ~~Burns~~ Burns' proposal) headed by a well-known and respected personality with professional competence and ample time to devote to the task. This committee, working with the director of development would draw up and promote a national plan for the development of ETV, while, at the same time, seeking funds needed.

-- Other "promotional" activities could also be included and directed by the director of development, such as: a White House Conference on ETV; a major promotional campaign; continue to promote and support Federal aid to ETV; form an Industry for ETV committee to enlist support and financial aid of business and industry; etc.

-- The first year would, of necessity, be devoted largely to organization of backing and financial support. This would be followed by a concentrated campaign (made along the lines discussed with Wentworth and Smith) to overcome the obstacles currently limiting the expansion of ETV. Such a campaign would include enlargement and continuation of activities indicated in the paragraph immediately above, plus other "informational" activities, aimed especially at the public.

-- The next logical step will be the actual program of assisting new stations to get on the air; development of improved techniques, especially for instructional television; development (or at least encouragement) of better teacher-training programs to incorporate ETV into the educational system of the United States; improvement of the professional standards and qualifications of those involved in educational broadcasting - the broadcasters themselves, teachers (both classroom and studio), etc.

-- As the most competent organization to carry out the above long-range plan, the NAEB would serve as the guiding and coordinating group, but would call upon other organizations - existing and to be formed (as indicated above) - to carry out most of the specific steps of the plan. The general supervision of the entire project would, in other words, be handled by the NAEB, with the Association then assigning the various tasks and functions to others in existence or creating new functional organizations where necessary. A great deal could, of course, be done by expanding the NAEB itself, if the funds are available, but the public relations value might be greater if the NAEB merely served as indicated in a coordinating and "steering" role.

National ETV Development

The future of our country and the world depends in large measure upon the quality of education and its wide-spread availability.

~~In the face of an coming enrollments~~
education will suffer qualitatively and quantitatively ~~unless~~

Taking advantage of technology

In the face of exploding enrollments, we must take advantage of every technological resource to come to education's aid.

Television, which can teach more to more people in less time than any device ever developed, ~~has already demonstrated its~~ ^{has} ~~proved~~ ^{has} the potential for providing massive assistance in meeting ~~both~~ ^{the} qualitative and quantitative needs of education.

But despite the impressive ^{educational} advances television has made in eight years, only 2 per cent of American students are obtaining any significant portion of their education via TV.

Instructional TV's ^{ultimate} ^{promise} ~~potential~~ ^{promise} can be realized only from an overall approach.

A. Purpose and Objectives

To alter ETV's present ^{provincial} piecemeal approach and coordinate its various elements into a planned program of growth which will make its benefits available nation-wide.

Such a plan for ~~expanded~~ ^{increased} level of activity for ETV would have the following objectives:

1. Provide every family in the U.S. a source of non-commercial educational and cultural programs
2. Provide every school and classroom in the nation a source of high quality instructional programs.
3. Provide for the establishment and maintenance of high professional standards in educational television in both content and presentation
4. Provide for a sound economic base for ETV, not dependent upon either philanthropy or nonrecurring government grants.
5. Provide for ^{libraries} ~~libraries~~ of program and course materials ~~sufficient~~ enough to give a wide variety of choice to curriculum planners utilizing ETV.

B. Major Needs To

In order to fulfill these objectives it is imperative that these needs be met:

1. Improved and expanded program of teacher training in both ^{Preschool} foundation and utilization.
2. Establishment on every state of comprehensive ^{libraries} ^{schools} ^{and} ^{2nd} ^{3rd} branches of television tapes and films available to all ^{schools} ^{and} ^{2nd} ^{3rd} a system of exchange.
3. Establishment of state, regional, and national ETV systems, functioning through open and closed-circuits, tape and ^{Kinescope} ^{and} ^{2nd} ^{3rd} various combinations of these elements.

C. Possible Approaches

1. Set up a Steering Committee composed of leaders in Education, Broadcasting, ^{Business} ^{Government} and Industry and Government, headed by a prominent person with professional ^{competence} and time to devote to the task. Such a committee would draw up a national plan for the comprehensive development of educational television.

2. Convene a White House Conference of Educational Technicians to focus public attention on the problem and ^{develop} plans for action.
3. ^{mount} ^{persuade} a ^{massive} promotional campaign to ^{every} persuade every American of the importance of ETW to his children and the national welfare.
4. Support Federal programs of aid to ETV ^(Mason-Rubenstein, Title VII NDEA) as ^{important} steps in ^{training}, ^{dissemination} ^{research}, and providing capital accumulations.
5. ^{Form} an "Industry for ETV Committee" to ^{enlist} enlist the support of business and industry.
6. Support ^{and encourage} the work of agencies and organizations working in the ETV field: NAEB, JCEB, NETEC, DAVI, EMC, etc.
7. Appoint a series of ^{solutions} ad hoc committees to ^{explore} explore and ^{develop} develop solutions for such problems as
 - a. Teacher Training for ETV
 - b. Analysis of the economics of ETV
 - c. ^{Interim} interim and long range financing of ETV
 - d. ^{Consolidation} Consolidation of school districts and development of ^{school} inter-school systems into economic units to ^{support} support ETV
 - e. Development of professional standards for ETV ^{personnel} personnel and technical standards for ETV equipment

- f. Establishment of tape and film libraries and systems for materials exchange
- g. Overall promotion of ETV.

D Implementation

The National Association of Educational Broadcasters, the 36th ^{100th} old trade and professional association of the non-commercial broadcasting industry, is the logical agency to undertake the organization and launching of the program plan. Its membership is composed of the ETV stations, closed-circuit installations, ^{or} production agencies as well as ^{individual} individual teachers and others who utilize ETV or are interested in its promotion and development.

However, NAEBS with modest staff and funds cannot, by itself, undertake to develop & finance a program ^{extending} leading to the ETV expansion here envisioned.

To organize the funds and backing for such a large scale effort, NAEBS needs modest funds to add to its headquarters staff a full-time director of development. It would be his functions:

1. Nominate and ^{secure} secure the "policy committee".
2. ^{secure} Secure the Committee an executive secretary
3. Draw up, in cooperation with the Committee, the national plan for ETV development.

4. Organize promotional activities to 'sell' ETV to the general public
5. Extend support of business & industry
6. Set up and work with ad hoc committees of NAFEB concerned with ETV in C7.

The first year would be devoted largely to organization of teaching and financial support. This would be followed by a ^{concentrated} campaign to remove ^{obstacles} the obstacles ^{limiting} limiting ETV expansion.

Subsequent steps would include ^{developing} developing a ^{program} program to ^{assist} assist stations to get on the air; ^{teacher} improvement of support & expanded ^{teacher} teacher training program for ETV, and ^{improvement} improvement of qualifications and competencies of ETV personnel.

Although NAFEB ^{would} ^{serve} serve as the ^{principle} principle guidance and coordinating agency, it would call upon and work with other ^{professional} professional educational groups, industry and ^{business} business organizations, and governmental ^{agencies} agencies. Under NAFEB ^{coordination} coordination, ^{various} various tasks & ^{functions} functions would be assigned to other groups in existence or created for the purpose.

In the first year of development, the following budget is proposed.

Phase I Development
Developmental Expenses
Equipment & Supplies
Personnel & Expenses

£12,000.00
5,000.00
5,000.00
3,000.00
<u>25,000.00</u>

RADIO CORPORATION OF AMERICA
RCA BUILDING
30 ROCKEFELLER PLAZA
NEW YORK 20, N. Y.



JOHN L. BURNS
PRESIDENT

May 11, 1961

Mr. John H. Marble
Marble & Vordenberg
Union Central Building
Cincinnati, Ohio

Dear Mr. Marble:

I appreciate very much, indeed, your thoughtful comments about my recent speech on Educational Television.

I was keenly interested to read your own proposals on the subject, and pleased that they parallel in many ways the program I outlined in Columbus. What impressed me particularly was not so much the coincidence in our estimates of the money required, but the thought that independent minds, working on the same important problem, had arrived at similar conclusions.

You may be interested to know that the National Association of Educational Broadcasters in Washington has taken up my suggestion for a committee to study the possibilities of implementing the program. I am certain that your own observations would be helpful to the NAEB in its deliberations, and, for this reason, I am taking the liberty of forwarding our exchange of correspondence to President William G. Harley.

It is a pleasure to send you the full text of the talk as you requested.

With warm personal regards,

Sincerely yours,

A handwritten signature in cursive script that reads "John L. Burns".

cc: Messrs. William G. Harley ✓
Carleton Smith

RADIO CORPORATION OF AMERICA
615 BUILDING
30 ROCKEFELLER PLAZA
NEW YORK 20, N.Y.



Mr. L. H. Brown
Enclosed

May 10, 1961

Carl H. Midden, Dean
College of Education Administration
University of Illinois
Urbana, Illinois

Dear Dean Midden:

Your response to my proposal for an all-out, educational TV effort was deeply heartening. The support and suggestion has received since it was made two weeks ago at the meeting for Education by Radio-Television is tremendously encouraging to all of us who see ETV as an important answer to our major educational problems.

You will be pleased to know that the suggestion for a broad-based committee to consider such a program has been taken up by the National Association of Educational Broadcasters in Washington. I am taking the liberty of forwarding your letter to William G. Barker, President of the NABE, though I know it will also be Association of the Broadcasting on this matter.

With warmest personal regards,

Sincerely yours,

cc: Caroline D. Smith
William G. Barker ✓

May 5, 1961

Mr. John L. Burns
President
Radio Corporation of America
30 Rockefeller Plaza
New York 20, New York

Dear Mr. Burns:

I am sure Doctor Tyler has already written you on behalf of the Institute for Education by Radio-Television, but I want to add to this thank you the gratitude of the Association for your stirring address at our NAEB luncheon.

As the Chairman of our Board, Richard Hull, so aptly said, this was unquestionably one of the three best speeches ever given in the 31 years of the Institute's history. I am sure you felt the warm response and eager interest of the audience. Their rapt attention and enthusiastic applause provided some indication of how impressed they were with your vision of what ETV might become if we are bold enough to expand our thinking and vigorous enough to effect its optimum development.

Many people told me that our NAEB luncheon, highlighted by your speech, was the outstanding offering in the whole Institute. To use a lovely phrase of Erica Mann's - I could not disagree with them less.

We of NAEB are not only grateful for your magnificent contribution to our program, but especially for the challenge and stimulus you have given us

Mr. John L. Burns

-2-

May 5, 1961

to project educational television into the full usefulness of which it is capable in the service of the nation.

We will keep you informed of our progress in implementing the blue print you have given us.

Sincerely yours,

William G. Harley

WGH:mem

bc: Dr. I. Keith Tyler
Mr. Richard B. Hull



Willard Hotel

PENNSYLVANIA AVENUE AND FOURTEENTH STREET - NATIONAL 8-4420

The Residence of Presidents

April 29, 1961

Mr. John L. Burns, President
Radio Corporation of America
New York, N.Y.

Dear Mr. Burns:

May I express my interest in and admiration for your proposal for a \$2.5 billion educational TV project in the U.S. This is one of the most realistic and imaginative proposals that we in education have received in the postwar period.

May I also volunteer my services to help in getting the program across. As Dean of the College of Business Administration at Lehigh (I am in Washington to attend a conference on economic development) and formerly Manager of Public Information at the Federal Reserve Bank of New York, I have had experience producing and teaching on TV through Channel 11 and have a continuing strong interest which, coupled with plenty of energy and enthusiasm, may be of help. Why not form a national committee of educators and businessmen to get this program across? I'm sure that I could enlist people like Frank Meyer of Afler, Jack Rothman of Esso and others on our board of trustees for such a vital public service.

Perhaps you would call a few people together to form such a committee. I should be more than glad to serve on it and know the leaders in economic education who might be added.

Yours sincerely,

Carl H. Modden, Dean
College of Business Administration
Lehigh University
Bethlehem, Pennsylvania

WASHINGTON, D. C.



EDUCATIONAL TV: A BLUEPRINT FOR ACTION

*An address at
Institute for Education by Radio-TV
Ohio State University
Columbus, April 28, 1961*

By
JOHN L. BURNS
President, Radio Corporation of America

EDUCATIONAL TV: A BLUEPRINT FOR ACTION

I have written and talked so much about educational television lately that I feel a kinship with the Harvard psychologist who overheard a conversation among the white mice in his laboratory. The smartest and plumpest of the mice was boasting: "I've got this fellow so conditioned that all I have to do is press a button and he feeds me."

When my button was pressed for this speech, I experienced the same conditioned reflex of acceptance that the words educational television have always stirred in me. What we need is more, not less, talk about the promise of educational TV, and about the urgency of using it to solve our paramount national problem.

It is true that, in human terms, the growth in educational television's first eight years has its impressive aspects. Gifted students in small rural schools are taking college preparatory courses; classroom demonstrations are being enriched by treasures from art, science and history museums;

the abstractions of higher mathematics are being brought to a nation-wide audience of early-risers; students are completing as much as two years of college in their living rooms; parents are tuning in to follow the daily lessons with their children.

It is also true that we have registered statistical progress. Our 56 educational stations can reach 70 million people; 150 closed-circuit systems operate in schools and colleges; 7,500 schools use television for regular instruction; 250 colleges and universities give academic credit for televised courses; altogether, more than 4 million students receive part of their instruction by TV.

These figures indicate that we are out of the incubator—but no more than that.

Even after eight years, only 2 per cent of our students get any significant portion of their education from the picture tube. At the present growth rate, educational TV will not be the primary instrument of instruction until the year 2,360—when our great, great, great grandchildren are enrolling in the first grade!

The real threat is that progress at this pace might dwindle into no progress at all. In Thornton Wilder's words, "every good and excellent thing . . . stands moment by moment on the razor-edge of danger." The increasing demands for new skills and higher scholarship, coupled with the growing shortages of teachers and facilities, give a surgical urgency to the nation's educational needs.

What must be done to alter educational television's fragmentized character, to move its electronic signals into classrooms from coast to coast, to link its varied elements in a planned program of growth?

Much has been written and spoken of educational television's bright promise in terms of in-

dividual experiments, but I believe its ultimate promise can be realized only from an overall approach, because the individual experiment is too small to show the way.

For this reason, my discussion today will be directed at outlining such an approach, estimating its cost, and suggesting possible steps to implement it. Perhaps with this as a background, some of the fertile minds in this room and elsewhere in education and broadcasting, can refine and improve my suggestions in order to bring the most urgent necessity of our times into being more quickly.

To get educational television off the ground, on a national scale, will require a massive injection of money, in the area of two-and-a-half billion dollars. It would be one of the most prudent investments we, as a nation, could make, because it would offer our best hope—and surely our most realistic one—for achieving a substantial upgrading of educational quality on a short-run basis and at a cost we could afford.

This \$2½ billion investment would buy:

Another 150 ETV stations giving us a nationwide educational network comparable to our nation-wide commercial networks. Approximate cost: \$100 million.

Branching closed-circuit systems for all schools in the United States. Approximate cost: \$900 million.

Studios and television tape centers for originating programs for these closed-circuit systems. Approximate cost: \$900 million.

Television receivers for our million-and-a-quarter classrooms. Approximate cost: \$600 million.

What could be accomplished, educationally, with facilities of this magnitude? We could meet our three most imperative needs in educational television today.

First, we could forge a stronger union of the teaching, broadcasting and graphic arts.

In many ETV experiments, the temptation has been to wheel a camera into a classroom and present a succession of teachers lecturing in front of gray drapes. The result can be, and often has been, worse than no television at all. An unimaginative teacher in one classroom is a misfortune for 35 or 40 pupils, but if you put him "on camera" you multiply the misfortune for hundreds or thousands of students.

With a program of the scope I have suggested, we could select the best teachers available and support them with the most effective aural and visual techniques. By combining the most venturesome concepts of educators, broadcasters and graphic arts specialists, we could develop more stimulating presentations in every subject from arithmetic to zoology. And we could make these presentations available promptly to teachers' colleges and other educational groups, thus starting a chain reaction of teaching excellence. We need training schools for television teachers just as we need dramatic schools for actors and actresses.

Shakespeare's schoolboy "creeping like a snail unwillingly to school" was a victim of poor teaching, but no power in his day could rescue him from his fate. Today, we *can* do something about the educational fate of 45 million American students.

Television, responsibly and creatively used, offers a matchless opportunity for introducing reality into the classroom, conveying the excite-

ment inherent in the learning process, recapturing the spirit of scholarly adventure so well expressed by Erasmus who said: "When I get a little money, I buy books; and if any is left, I buy food and clothes."

The *second* thing we could accomplish with our \$2½ billion investment would be to establish in every state comprehensive libraries of television tapes and films by standout teachers.

Through an exchange system, each school in a particular area could contribute to one of these libraries and share its program material. The school with a talented arithmetic teacher could commit her presentations to tape and distribute them widely; the one with a well-appointed physics or chemistry laboratory could make its demonstrations available to hundreds of others; the one with a gifted music and art faculty could supply those unable to afford their own specialists.

The TV tape equipment needed to translate this prospect into performance is already available. Only last month, simplified tape recorders, selling for roughly half the price of standard commercial broadcast equipment, were introduced, and there will be further technical advances and further economies in this equipment field. The new units already make control of originating facilities financially feasible even for moderate-size educational institutions.

For the schools, a tape-and-film exchange program would remove any excuse for 41 per cent failing to offer instruction in foreign languages, as is true today; or 36 per cent neglecting to provide a course in physics.

For the teacher, the system would permit him to concentrate on the activity for which he is best suited, whether it be lecturing to thousands of students or counseling the individual. On the

basis of my own teaching experience, I am convinced that individual guidance is the most important aspect of teaching. With television, the hours spent in providing personal help could be multiplied many times; the general level of teachers' pay could be raised; and they could enjoy a greater measure of personal prestige. The teacher is the key figure in the educational process, and the element of human contact must always be supreme—but the method is important, too, as the textbook has proven.

Technological unemployment would be no threat for qualified teachers because the demand has far outraced the supply. According to the Ford Foundation's Fund for the Advancement of Education, it would take half of all college graduates over a ten-year period to meet our need for new teachers, and obviously far less have been entering the profession. Many years ago, Charles W. Eliot observed: "The fear of losing one's job has kept education in America fifty years behind its possible improvement." This fear is as thoroughly unfounded today as it was then; and we must work energetically to remove it as a psychological block against educational TV.

The *third* accomplishment from our \$2½ billion investment would be the development of state-wide, region-wide, and nation-wide educational television systems.

Those systems would function through open circuits, closed circuits, economical television tape machines, and various combinations of these elements. Although no rigid priority system is necessary, the open-circuit broadcasts, it seems to me, should come first because they would serve to showcase the virtues of televised education to the community in the most eloquent manner possible. Concurrently, in many places, would

come the closed-circuit systems and tape machines which would form the ultimate hard core of instructional facilities, bringing the advantages of multiple-channel television to every classroom in the nation.

The television tape machines would introduce a new flexibility into the curriculum, enabling schools to schedule demonstrations and other programs at the most convenient hours. Television tape would also permit major economies through the repeated use of outstanding presentations.

With all these elements functioning in concert, every community would be able to select the finest program material appropriate to its own needs. Far from imposing uniformity on local curriculums, these systems would impart a richness and variety often lacking in today's academic programs. They would serve elementary and secondary schools, colleges and universities, and even adult education classes.

I believe the three accomplishments I have outlined would solve our basic national education problem within a decade, and it is against the backdrop of this probability that the cost of \$2½ billion should be evaluated. Today, education represents our largest single category of public spending next to national defense—\$19 billion a year. What we are talking about for television facilities, then, is 13 per cent of one year's budget.

Nevertheless, to raise such a sum, a supreme effort will be required by every element involved in education—Federal, State and Local Governments, Foundations, Business and Industry, and other private sources. It will not be easy, any more than the shift from planes to missiles was easy in a military sense. But it will be just as significant to education as missilery is to security.

Last year, more than half the money spent by states and localities on public-school education came from property taxes. In many communities, this tax base is approaching the saturation point; historically, as a revenue source, it has been unresponsive to increases in national income.

While elementary and secondary public-school enrollment has doubled since 1900, expenditures for it have gone up more than seventy-fold. Since 1950 alone, such expenditures have risen over 150 per cent.

With present instructional methods, school costs are likely to continue climbing along with enrollments. With television, the economic ground-rules can be drastically altered.

Experiment after experiment has shown that the larger the number of students viewing a program, the lower the per pupil cost. In one Midwestern area, 30,000 pupils in 1,000 different classes are being taught Spanish by an exceptionally talented teacher at a per-pupil cost of less than a penny a lesson. Directors of the Midwest Program on Airborne Television Instruction estimate that if 1,000,000 pupils use the program the first year, the cost of each child's televised education will be no more than \$2. Eventually, they hope to reduce the cost to 50 cents a child.

Our success or failure with educational television will have profound implications throughout the world. Our partners in the Western alliance are also faced with the problem of educating their children with too few teachers and too few classrooms. They, too, recognize the urgency of getting better results for lower per-pupil costs.

But formidable as the educational problems of the Western nations are, they are far outstripped by those of the developing areas of Asia and Africa. Scarcely half the world's 550 million

school-age children are actually receiving any formal education, and the bulk of the educational have-nots are in this region.

A significant beginning in these areas might be made by providing rudimentary and inexpensive phonograph records and radios, perhaps as part of our foreign aid program. In this way, sound alone might be used at the start, possibly supplemented with slide projectors in some cases. Then, as the idea of electronic teaching aids achieves acceptance, television might be introduced on a gradual basis.

Imagine the strides that could have been made toward stamping out illiteracy in the past decade if we had spent on electronic educational tools just one per cent of the \$36 billion we spent on military aid.

There are 700 million adults on our globe, one-fourth of the population, who neither read nor write. They never will, if we stick to conventional education methods. Their only fighting chance is through the spread of electronic techniques. On a broader canvas, these same techniques might also give all people, literate and illiterate, a fighting chance to live in peace. For, as Lord Attlee has said: "Since wars begin in the minds of men, it is in the minds of men that the defenses of peace must be constructed."

It is in the minds of men, too, that the campaign to upgrade our educational standards will be won—or lost. For even in a world of power, the power of ideas remains supreme.

We—you and I and all those involved in this field—can move the full realization of educational TV from the Twenty-Fourth Century to the Twentieth if we act promptly and decisively.

Specifically, I propose that the National Association of Educational Broadcasters take the in-

initiative in setting up a Steering Committee comprised of leaders in the fields of Education, Broadcasting, Business and Industry, and Government. This Committee should then:

1. Draw up a national plan for the comprehensive development of educational television.

2. Prepare detailed budget proposals for large-scale public and private financing.

3. Establish general timetables for the build-up of open-circuit and closed-circuit systems, plus tape-and-film libraries.

4. Seek to enlist the wholehearted support of the Department of Health, Education and Welfare, the Foundations, and other interested principals.

5. Mount a massive informational campaign to persuade every American that failure to support this effort will mean the forfeiture of our children's educational heritage.

Ours is a task of formidable proportions. It can be accomplished only if we pursue it with energy, intelligence and dedication. We must, all of us, keep pushing buttons everywhere—and keep responding when our own buttons are pushed. Thank you.

50,000

~~2,000,~~

200,000

50

50

300,000

250,000

Columbus April '61

News

CHANNEL CHUCK
By Bill Keane



ON THE AIR

With **JOE R. MILLS**

Dispatch TV-Radio E

National Educational Network Envisioned in Institute Talk

The proposal that a national network for educational television be established was furthered by an address before a Thursday luncheon meeting of the Institute for Education by Radio-TV in the Deshler Hilton Hotel Thursday. The speaker was John L. Burns, president of the Radio Corporation of America, a man close to the broadcasting business.

His proposal was for a \$2½ billion expenditure which would "solve our basic national education problem within a decade." But beyond the firm mathematics of the \$2½ billion figure the address remained a glowing nebula of good intention and hope.

ON THE SIDE of specifics, Mr. Burns detailed the use to which his big round numbers would apply. The billions would buy:

"Another 150 ETV stations giving us a nationwide educational network comparable to our nationwide commercial networks. Approximate cost: \$100 million.

"Branching closed-circuit systems for all schools in the United States. Approximate cost: \$900 million.

"Studios and television tape centers for originating programs for these closed-circuit systems. Approximate cost: \$900 million.

"Television receivers for our million- and-a-quarter classrooms. Approximate cost: \$600 million."

A SEARCH of Mr. Burns' manuscript failed to reveal any equally firm approach to the matter of raising the necessary billions of dollars.

The need was made clear. The manner of solution was more speculative. The \$2½ billion, Burns said, equals about 13 per cent of our current annual national education budget.

"To raise such a sum," he said, "a supreme effort will be required by every element involved in education — federal, state and local governments, foundations, business and industry, and other private sources. It will not be easy, any more than the shift from planes to missiles was easy in a military sense. But it will be just as significant to education as missilery is to security."

MEANWHILE, as the study goes forward, Mr. Burns proposes the National Assn. of Educational Broadcasters take the initiative in setting up a steering committee comprised of leaders in the fields of education, broadcasting, business and industry, and government. This committee should then:

"1. Draw up a national plan for the comprehensive development of educational television.

"2. Prepare detailed

Nets Set For Man in Space Launch May 2

Television networks poised Friday for the U.S. man-in-space shot expected Tuesday, May 2.

CBS-TV cleared Ch. 10 time from 10:30 to 11 a.m. Monday for a pre-shoot report called "T minus 12." From 6:50 to 9 a.m. Tuesday CBS-TV takes Ch. 10 time for the actual launching. "Juvenile Judge," 7:30 p.m. Tuesday gives way to a CBS-TV wrap-up "T plus 12."

ABC-TV will go on the air via Ch. 6 "... 10 minutes before the shot, remaining on the air until the fate of the shot is known." There will be an ABC wrap-up piece in Tuesday evening time, still to be set.

NBC-TV plans included coverage but no specific scheduling was available immediately. Local network radio stations will monitor the nets for the "10 minutes before" alert and will carry coverage.

budget proposals for large-scale public and private financing.

"3. Establish general time-tables for the build-up of

open-circuit and closed-circuit systems, plus tape-again libraries.

"4. Seek to enlist the wholehearted support of the Department of Health, Education and Welfare, the foundations, and other interested principals.

"5. Mount a massive in-

formational campaign to persuade every American that failure to support this effort will mean the forfeiture of our children's educational heritage."

Lots of luck!



"It's the baby's soft plastic bottle. I throw it at the umpire."

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PROF. ITALO NERI

Rai - ~~Contro Olimpiade~~

Via G. D. Romagnosi, 1 - Tel. 664

Roma



HOTEL EXCELSIOR

ROMA

Thursday

March 9, 1961

Dear Bill:

The school conference, which started out as simply as now a meeting to which 96 nations will be invited, and will convene on or about Dec 3 for one week. A planning session will be held in about 10 days to develop an agenda and a modus operandi.

The Italians have assigned this project to Prof Italo Neri, whose card is enclosed. He used to be at the U.N. and is very "public relations" minded. He wants all invitations and arrangements for the U.S. participation to be handled by the N.Y. Office of R.A.I. - (666 5th Ave, I believe)

through Mr Padavan (PADAVANI). They are going to invite the NETRC, NBC, CBS, ABC and the Ford Foundation therefore, I think that you can tell Mr Burns that we suggested their participation and also the display of some equipment especially needed for school television.

Alberghi di proprietà e gestione della «C.I.G.A.»

ROMA: Hotel Excelsior - Grand Hotel - VENEZIA: Daniell Royal Excelsior - Gritti Palace Hotel - Grand Hotel Europa & Britannia - Hotel Regina - LIDO: Excelsior Palace Hotel - Grand Hotel Des Bains - Grand Hotel Lido - Hotel Villa Regina - FIRENZE: Hotel Excelsior Italia - Grand Hotel - NAPOLI: Hotel Excelsior - MILANO: Hotel Principe e Savoia - Palace Hotel - STRESA: Grand Hotel et des Iles Borromées - GENOVA: Colombia Excelsior Hotel (STAT).



HOTEL EXCELSIOR

ROMA

(2)

The conference is not interested in closed circuit, nor in adult education of a general nature. Harboring experiments such as intentional classroom for credit are included. Only the professionals will be asked - not those who wish to experiment on the social or philosophical concepts.

They are very interested in "air-borne" and we should plan on bringing some one from Purdue - I suppose Jim Miles will be asked by Ford, if we don't do so first.

If you have any ideas, Veri would like to have them now so he can claim them as his own. He took over several of mine, but I didn't mind as I watched his act.

Incidentally, the Italians are very proud of their idea to have ETV and will be glad to help us if we need any assistance -

all my best.

Leonard

L.H. MARKS

158



HOTEL EXCELSIOR

ROMA

317CAFRIZ BLAC
WASH D.C



HOTEL
EXCELSIOR
Roma



POSTA AEREA

AIR MAIL

Mr. William Harley, President
National Assn of Educ. Broadcasters
Dupont Circle Bldg
Washington D.C. USA

March 14, 1961

Mr. John Burns
President
Radio Corporation of America
30 Rockefeller Plaza
New York 20, New York

Dear Mr. Burns:

I have today received a note from our General Counsel, Leonard Marks, written from Rome. He indicates that the school television conference, about which we talked and concerning which I wrote you recently, has been expanded to a meeting to which 96 nations are to be invited and which will be held on or about December 3rd.

It is now the intention to invite NETRC, NBC, CBS, and ABC, and we suggested that RCA be asked to participate and display some equipment especially related to school television.

Professor Italo Neri, has been put in charge of the conference and he has asked that invitations and arrangements for U.S. participation be handled by a Mr. Padavani, of the New York office of R.A.I.

It is our further understanding that the conference will not be interested in closed circuit or general adult education of an informal nature. However, courses for credit, such as the Continental Classroom series, are to be included.

Mr. John Burns

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March 14, 1961

I will write Professor Neri shortly regarding the sort of contribution NAEB plans to make.

Sincerely yours,

William G. Harley
President

WGH:rkf

b.c. ✓ Mr. Leonard Marks

Mr. John Wentworth

Mr. Charles H. Colledge

CHARLES H. COLLEDGE

DIVISION VICE PRESIDENT AND GENERAL MANAGER

BROADCAST AND TELEVISION EQUIPMENT DIVISION

INDUSTRIAL ELECTRONIC PRODUCTS

RADIO CORPORATION OF AMERICA

CAMDEN, NEW JERSEY



JOHN WENTWORTH

MANAGER

EDUCATIONAL ELECTRONICS

INDUSTRIAL ELECTRONIC PRODUCTS
RADIO CORPORATION OF AMERICA

CAMDEN 2, N. J.
WOODLAWN 3-8000

March 6, 1961

Mr. John Burns
President
Radio Corporation of America
30 Rockefeller Plaza
New York 20, New York

Dear Mr. Burns:

Thank you for your splendid testimony on the Magnuson Bill. Such a statement by a person of such prominence in the commercial side of the industry will carry great weight in shaping the attitude of the Congress, the broadcasting industry, and the general public.

This letter concerns the other matter Leonard Marks and I discussed with you just before the hearing; namely, the conference on school broadcasting to be held in Rome this year.

As you recall, Mr. Marks, our general counsel, represented the NAEB at a European Broadcasting Union meeting in Madrid, in November. At the meeting a Professor Rodino, of Italy, presented a paper on the efforts of RAI to use television for in-school use. Mr. Marks spoke about the experience of the NAEB in the field of educational radio and television and aroused such widespread interest that it was agreed that a conference on school broadcasting should be held in Rome at an early date. Professor Rodino was appointed to head a committee to work out arrangements. (This committee is meeting on March 13th, and Mr. Marks will confer with Professor Rodino in Rome March 9th.) Mr. Marks was told repeatedly by representatives of various foreign governments present, that the Rome meeting would not be a success unless the NAEB played an active role in the deliberations. We should very much like to do so.

Our plan would be to assemble a four-man team of outstanding specialists with notable experience in particular aspects of school broadcasting in America. A completely planned and organized presentation would then be put together, utilizing the specialists in "live" reports supported by carefully prepared graphics and excerpts

Mr. John Burns

-2-

March 6, 1961

from the very best examples of American school broadcast programs. This presentation would be thoroughly rehearsed and polished for presentation before the team left this country. Such a professional production plus the team's participation in the subsequent discussions would, we feel, combine to make an outstanding contribution from America, the country which has done far more experimentation in in-school use of television than any other.

We have the people and the know-how to do this job; the only thing lacking is the necessary funds.

Because of your particular interest in educational television and because of the outstanding role RCA has played in the development of educational uses of electronic equipment in this country, we believe RCA might be interested in underwriting such an undertaking. We estimate that it would require \$10,000. to cover the production costs plus travel and expenses for the team for one week.

As a non-profit organization representing the educational television and radio stations of the U.S., NAEB is uniquely qualified to do this job - to share with representatives of foreign broadcasting systems in our knowledge and experiences with school broadcasting and pass along our suggestions on ways and means in which they may employ these electronics. Instruments to serve the educational needs of their countries. We sincerely believe that we can make a valuable contribution in the world struggle by demonstrating American leadership in the use of broadcasting for instruction, and establishing our earnest desire to share this know-how with our European neighbors.

We are ^{pleased} ~~hopeful~~ that you will feel ~~that~~ RCA can appropriately support the NAEB in this endeavor.

It was good to see you again and I am looking forward to your presentation in Columbus at the Institute for Education by Radio-Television.

Sincerely yours,

William G. Harley
President

WGH:rkf

cc: Mr. Leonard Marks

Biographical Sketch

November, 1960

JOHN L. BURNS ✓

John L. Burns, president of the Radio Corporation of America, is known on the golf course for the same kind of powerful drive that has made him a leader in the electronics industry. A frequent member of his foursome at the Round Hill Club, in Greenwich, Conn., says, "John played baseball in school and he still swings like Mantle going for a homer. He's got a powerful follow-through that gets him 275 yards off the tee. As for details like putting -- well, he's not so interested."

When it comes to running the nation's largest electronics company, associates find in Mr. Burns a similar muscular follow-through and a conviction that after he has teed off it's up to them to carry out the details. Now 52, huskily built and with piercing blue eyes, he is said to possess an enthusiasm which inspires subordinates to performance beyond their normal capacity.

Speaking of his own beliefs about human psychology, Mr. Burns maintains that few people ever make the maximum use of their powers. "The urgent need," he says, "is for a way not just to measure I.Q., but to increase A.Q., or 'Accomplishment Quotient.'" His own method of doing this, he explains, is through figuring out other people's motivations and meshing their own personal goals with those of business management.

To achieve this objective, Mr. Burns insists on devoting a major portion of his time to personal contacts with as wide a range

of people as possible. He believes that this is essential to a company president and that "you can't live in an ivory tower."

A typical Burns business day, therefore, is devoted largely to conferences and talks with RCA associates, beginning even before he reaches his office on the 53rd floor of 30 Rockefeller Plaza. On the way to work from his home in Greenwich, he usually arranges to pick up one of his associates for a chat, and there is always room for one or two other business passengers on the way home. Since he heads a company which specializes, among other things, in the most up-to-date electronic communications equipment, his chauffeur-driven limousine carries a radio-telephone that keeps him in constant touch with office or home.

By the time he reaches Radio City, a few minutes before nine, Mr. Burns' pockets have accumulated a collection of notes -- some written on match covers -- which his secretary turns into memos to appropriate subordinates. Comments on the television shows he has watched the night before are often directed to the management of the National Broadcasting Company, an RCA subsidiary.

Mr. Burns' large, comfortable stone house in Greenwich is as important a center of activity to him as his skyscraper office, for he believes firmly that an executive has a duty to his family. His wife, the former Beryl Spinney, daughter of a college professor, has furnished their home with antiques, many picked up on vacation trips to Italy and Mexico. Son John, nicknamed "Joss," is an Exeter prep student with major interest in science and music. Daughter Lara leans toward athletics and is becoming an expert horsewoman.

Mr. Burns makes it a point to take a family trip every year during the children's spring vacation. He hunts, fishes and plays golf with Joss, and has been known to postpone a business appointment in order to watch Lara's softball team in action when there's a big game at the Greenwich Country Day School.

John Burns' leadership of RCA, from the day he took over the presidency in March, 1957, has shown an unusual combination of personal flair with scientific management principles. He came to the post from Booz, Allen and Hamilton, nationally prominent management consultant firm, of which he was a partner and Vice Chairman of the Executive Committee. For ten years prior to joining RCA, Mr. Burns had been a consultant and adviser in the corporation's post-war reorganization and expansion.

His own background and personality are a rare blending of the intellectual with the practical man of experience. Born in Watertown, Mass., Mr. Burns attended grade school and high school there. He played football and baseball, boxed and wrestled, and to keep in shape and earn money during the summers he swung a pick and shovel on a highway construction gang. He worked his way through Northeastern University in Boston, and was graduated in 1930 with a degree in electrical engineering. Under Northeastern's cooperative work-study program, he alternated ten weeks in class with ten weeks in industry, doing hitches with the Western Electric Company in Boston and the Dewey and Almy Chemical Company in Cambridge.

Mr. Burns continued on to Harvard where he specialized in metallurgy, earning his Master's and Doctor's degrees. He taught metallurgy and ran the metallurgical laboratory at Harvard, and then proceeded to teach the subject for a semester at Lehigh University.

Soon he began to feel restless within academic confines.

"I decided I knew enough of the theory and wanted to take a crack at actually doing the work," he explains.

The 26-year-old professor of metallurgy resigned to become a day-laborer in the South Chicago mill of Republic Steel. He was assigned to the 10-inch mill, where he wrestled 450-pound coils of white-hot metal with a pair of tongs. At first he went back to his room at the YMCA after work so exhausted that he seldom had the strength to eat dinner before flopping into bed. The Burns physique was equal to the challenge, however, and he stayed on the job for a year. It is a tribute to his instinct for personal relations that none of his fellow mill hands ever knew he was a Doctor of Science.

Republic's management, however, soon became aware of Mr. Burns' special talents. From the 10-inch mill he rose through the ranks to become director of metallurgical laboratories, superintendent of large ingot manufacture, manager of the Grand Crossing Works, and superintendent of Republic's wire division.

At this point a new opportunity presented itself, in the form of an offer from Booz, Allen and Hamilton. He left Republic and at the age of 33 moved from the day-to-day decisions of line management to the more rarefied atmosphere of corporate management consulting. As a BA&H partner he worked during the next years on studies and reorganization programs for thirty of the largest manufacturing and mercantile corporations in the United States. The company also helped streamline many of the executive departments of the Federal Government, as well as a number of foreign governments.

Mr. Burns' counseling of RCA brought him favorably to the attention of Board Chairman David Sarnoff, President Frank M. Folsom (now Chairman of the Executive Committee), and the other directors. They were looking for a man to help steer the corporation through the ever-increasing complexities and opportunities of the fast-growing electronics industry.

"I decided to accept the offer," Mr. Burns says, "because I was fascinated by the tremendous variety of things to which electronics can be adapted. I also knew the RCA management team and was sure I could work well with them."

Mr. Burns believes that a tightly organized team operation is the only way to handle the complexity of problems that face a large corporation today. To make certain that RCA management is always pulling in the same direction -- and to get the benefit of a constant flow of fresh ideas -- he instituted regular weekly meetings of an Executive Council made up of top aides. Twice a year a broader group forming the "general managers' club" gets together at a quiet meeting place in the country for a two-day skull session. As a general guide to the thinking of all RCA executives, Mr. Burns has formulated a seven-point "management creed" outlining the basic philosophy of corporate policy.

During his two years as president, John Burns has broadened the base of RCA operations to take best advantage of new trends in the industry. Fifteen new units have been formed within the corporation to move into new areas of business. The Defense Electronic Products arm of the company has been expanded, so that sales of products and services to the Government now amount to more than a quarter of RCA's business. New divisions have been formed in electronic

data processing and in the field of industrial controls and automation equipment. An Astro-Electronic Products Division was created to develop and produce earth satellites, space vehicles and associated electronic equipment.

In two years, under Mr. Burns' leadership, the non-entertainment aspects of RCA's business increased by more than 30 per cent. In the past year alone the company introduced 100 new products, from thimble-sized vacuum tubes to giant radars. During 1959 it is expected that RCA's new products list will grow to nearly 400.

Mr. Burns speaks of the future of electronics with visionary zeal and enthusiasm. He sees electronic "brains" operating entire factories in the not-too-distant future. He foresees satellite communications systems that will bring about a world-wide television network.

Turning to education, he suggests that televised classes will help solve the teacher shortage and bring the world's best teachers into the smallest and most remote school rooms.

"There is no technical reason," he says, "why all schools throughout the country could not be tied together in one vast educational network to take advantage of television's magic gift for thrusting millions of spectators at once into the lap of history-in-the-making."

As for the home of tomorrow, that will be an electronic miracle too. Mr. Burns envisions a "household electronic center" where a few simple controls will set up the family schedule for each day. The electronic housekeeper will rouse us from sleep in the morning, close the windows, cook breakfast, open the garage doors,

and warm up the car. During the home-owner's absence, it will follow instructions to wash the dishes, do the laundry, clean the house, and pay the milkman. It will have dinner ready in the evening and the TV set tuned to any selected program.

Meanwhile, the President of RCA has plenty of other decisions to make from day to day. Mr. Burns was asked, for example, whether he found any major differences between his former job as management consultant and his present post as corporation president.

"As a consultant I was in the position of recommending policies and procedures to someone else," he said. "Now I have to carry them out and make them work--- and that's quite a difference indeed.

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The Challenge of Quality in Education

Address by

JOHN L. BURNS

President, Radio Corporation of America

The Challenge of Quality in Education

I. INTRODUCTION

I am highly honored by your kind invitation to speak here tonight.

Those of us who work in commercial television and radio have a special appreciation of the serious problems confronting the educational stations, and a tremendous esteem for the superb job you have done.

Through your broadcasts to the classroom and the community, you have built yourselves into a major educational force.

You have helped turn the four walls of the school room into picture windows that look out upon a limitless new world of knowledge. Taking full advantage of the matchless ability of radio and TV to reach into the home, you have created programs that contribute immeasurably to the enrichment of adult education.

I heard recently about a Professor who complimented his adult nighttime television students on getting far better grades than his daytime classroom students. Next day, the Professor got a note from one of the adult television students saying: "Don't be too critical of the daytime students. After all, they take their report cards home to understanding parents. We have to face our wife and kids!"

You in educational broadcasting are pioneering in an area of vital importance to our

national welfare — an area that today is alive with excitement and experimentation.

Nevertheless, because of the critical problems faced by education in general, there is an overriding need for still greater pioneering effort. In this, the educational broadcasters have a beckoning opportunity for leadership. For it is my steadfast conviction that *television offers a practical and immediate means for the greatest forward stride in education since the invention of the printing press and the textbook.*

II. THE PROBLEM IN EDUCATION

The dimensions of the current problem in education are clearly evident even to the layman.

They are reflected almost daily in grim headlines about the explosive increase in school population, the serious shortages of teachers and facilities, and the steady rise in the cost of education. They are revealed, too, in sobering statistics which show that one out of three high school graduates, who finishes in the top quarter of his class, does not go on to college because of a lack of funds. And in other statistics which show that fully 50 per cent of all college graduates over the next ten years could well be used in the teaching ranks.

Against this background, the inadequacy of our teaching methods is becoming painfully apparent. In schools, generally, the chief reliance is still on the teacher, the textbook, and the blackboard, as it has been for generations, to the exclusion of far-reaching innovations that have been developed in recent years.

And this brings me to my main thesis. As a former science teacher whose interest in the educational process has deepened with the years, I believe there is still another educational problem of even greater dimensions

than those so far mentioned, a problem inextricably linked with all the others.

The real challenge, I am convinced, lies in the need for a massive upgrading in the quality of education.

By this, I mean:

1. A higher level of instruction and methods.
2. A higher level of instructors.
3. A greater attention to the individual student.
4. The fullest development of the human potential.

The challenge is all the more compelling in view of the quickening tempo of technology, the growing complexity of our social organization, and the mounting menace of Communism.

To meet the challenge will require new ideas, new approaches, and a new willingness to experiment and innovate. Many of the methods and tools for bringing about an immediate upgrading of quality are at hand. But we have made only the barest start on learning how to use them. In this area, I believe that the experience of American business and industry suggests a constructive approach.

III. IMPORTANCE OF NEW METHODS

Let me say, at the outset, I am fully aware that anyone who attempts to apply to education certain concepts from business and industry is automatically suspect.

He is as wide open to criticism as the alleged teacher here in the Detroit area who placed an ad in one of the local newspapers. The ad read: "If you are not satisfied with your child's progress in school, why not have *he* or *she* tutored by an experienced teacher."

Critics are quick to claim that the fellow who tries to translate education into dollars-and-cents terms really wants to cheapen it. They take the position that while automation in office and factory may be beneficial, automation in the classroom simply will not work.

They seem to forget that the biggest forward surge in the history of education was brought about by automation — in the form of the printing press. Then, for the first time, outstandingly gifted teachers were able to set down their ideas in books that spread their wisdom and influence far beyond the narrow reach of their personal contacts. It is well to remember that the book is one of the most important products of automation in the history of man.

The fact is that education has now become our biggest business. It has an annual budget of \$20 billion, and more employees and a larger “plant” than either the steel or auto industry.

In industry, over the past half century, output per man-hour has shown a steady increase. This increase has been due basically to our skill in working out constantly better methods, and providing more and better tools to back up each worker.

Experience suggests that we can multiply the effectiveness of the good teacher with improved methods and appropriate tools, just as we have multiplied the effectiveness of the factory worker, the office worker — everybody right up to and including top management. In fact, just as the printing press did.

There are now available a wide variety of new tools and techniques for improving the quality of our educational system. Foremost among them, of course, is television.

Closed-circuit installations are extending the influence of talented teachers from one to several classrooms.

The non-commercial educational stations are carrying their lessons and lectures into the home, as well as the classroom, to a potential listening audience 50 per cent larger than the nation's total school enrollment.

The commercial stations and networks are offering an ever increasing fare of educational and cultural programs to entire regions, and, in the case of NBC's Continental Classroom, to the whole nation. Incidentally, Continental Classroom's course in Modern Chemistry points up sharply the great value of color television in education. Those early risers among you, who have seen Dr. John Baxter's laboratory demonstrations, can appreciate color TV's amazing capacity for enlivening educational presentations.

I envisage the day when all the nation's schools will be linked in one comprehensive educational television network. Such a network, far from imposing uniformity on local curricula, could help to provide richness and variety.

As interest in educational television grows, TV set manufacturers are working hard to improve the style and utility of their products for the classroom. For example, RCA is displaying here at your convention for the first time, a new television receiver designed specifically for classroom use. This model, which will be available after the first of the year, features greater picture brightness, higher audio levels, precision tuning, ability to be locked, greater mobility, and a special stand that can raise the set to a height of six feet.

This new model was designed on the basis of suggestions offered by educators and educational broadcasters themselves. And I want to take this opportunity to thank the education fraternity for their help and cooperation in this project.

Great as its potential is, however, television is not the only new tool available to improve educational quality.

The school of tomorrow will have electronic teaching machines that will free the instructor from routine tasks and give him more time for personal counseling. The teacher's desk will be equipped with a tiny electronic scanning device linked with the library and the records office so that references can be checked quickly. A small-size electronic computer will correct many types of examinations, process student records, survey performance and determine areas of difficulty.

Magnetic tape, which is even now finding use in the schools as well as in your own educational stations, will extend its usefulness in the years ahead. In fact, schools might well start on a program of automation today with a relatively inexpensive magnetic tape sound system, and build up from there.

Now under development at the RCA Laboratories is a magnetic tape player capable of reproducing pictures as well as sound. It works through a standard television receiver.

It also includes a recorder attachment which can pick up a program from a TV set, a closed-circuit system or a studio. A tape record made in any of these ways is ready to be played back immediately — without any processing — through a television receiver.

This video tape player will eventually be a natural complement to a school television system. It will permit the flexible use of a library of pre-recorded programs.

By comparison with present professional video tape recorders used in television stations, the new apparatus will be low in cost. It may be set up to supply a pre-recorded program to one classroom, a group of classrooms, an entire school, or a whole school system.

IV. NEW TOOLS, HIGHER QUALITY

When these exciting new educational tools are in general use throughout our schools and colleges, their effect on quality in education can be tremendous. Just consider the advantages of closed-circuit television alone.

1. *It can help bring about a higher level of instruction.* It can extend the great influence of the best teachers far beyond the confines of their own classrooms, and give them a dramatic medium for projecting their ideas. As one student in Hagerstown, Maryland, put it: "In class, the teacher talks to *us*. On television, she talks to *me*."

Closed-circuit television enables schools to call upon men of specialized talents for occasional lectures. By drawing on a central video tape library, the closed-circuit system could present lectures by the greatest minds of our times. By linking up with commercial and educational stations, it could take students to the missile range at Cape Canaveral or inside the nuclear submarine *Nautilus*, to the halls of Congress or the Chamber of the Supreme Court.

2. *Closed-circuit television can help raise the level of instructors.* The big need is to relieve the teacher of all repetitive tasks through automation and give him more time for working with individual students.

Closed-circuit TV can greatly ease the burden on teachers by giving each one a chance to do the thing he is best suited for. One teacher may be best suited for lecturing to a group of several thousand students simultaneously. Another may be able to do an outstanding job of conducting a follow-up classroom session with a handful of students. Through the more effective use of teaching

talent, television can make higher salaries a reality throughout the teaching profession.

With many schools and colleges participating in a program and sharing the cost, the salary of a particularly gifted television teacher might well be in the six-figure realm of the highest paid businessmen or other professionals. The entire salary scale could be raised, at lower cost per student. With higher salaries would come increased stature for the teacher in his own community. These factors would, in turn, keep able men and women in the teaching ranks, and attract new teachers of the highest caliber.

Since our nationwide requirements for teachers can never be met by present methods, television certainly poses no problem of unemployment for teachers.

3. Closed-circuit TV can make it possible for the teacher to give greater attention to the individual student. Once the classroom instructor has been freed from many of the chores he now performs, he will be able to devote far more time to personal counseling. Indeed, this opportunity for individualized instruction is one of the great advantages of television, magnetic tape and other electronic aids to education.

They permit the teacher to reach the student on a highly personal basis. They enable each student, in effect, to set his own pace. The fast-learner in a particular subject, is challenged to work up to his full capacity. The average-learner is encouraged to develop what gifts he possesses. The slow-learner is assured of the kind of attention that will prevent his falling hopelessly behind.

A student might be in the third grade in spelling, the second grade in arithmetic, and the fourth grade in history. We do not have equal abilities.

Every pupil has potential talent of some kind, and his value in our democratic society lies in the extent to which he is helped to use his special talent for the common good.

Former President James A. Garfield once said: "A pine bench, with Mark Hopkins at one end of it and me at the other, is a good enough college for me!"

This one-to-one teacher-student ratio has become impossible under modern classroom conditions. But with television and other electronic devices, teachers can have both the time and the means to reach the pupil once more on a person-to-person basis.

V. RESEARCH AND DEVELOPMENT

There is no doubt whatever about the capacity of educational television and other electronic devices to help us realize our democratic ideal of the fullest development of the human potential.

However, despite the fact that there are some 300 experiments, which we know about, now going on in closed-circuit TV, few minds have begun to apply themselves as yet to the all-important questions of the best uses of these new tools and the implications they will have for teaching methods, facilities and curricula. Few have weighed the question of how to bring about a satisfactory combining of the teaching, broadcasting and graphic arts.

To answer these questions, there is urgent need for a full-scale program of Research and Development in education, comparable to the R & D programs now under way in defense and industry.

Today, industrial research is a \$12 billion operation — the "industry of discovery," as one economist calls it. In my own field of electronics, there is an axiom to the effect that "either you get into research, or you get out

of business." Many industrial corporations set aside 5 to 10 per cent of their annual budget for research.

By contrast, the total amount spent annually on educational research and development comes to about one-tenth of one per cent of the overall education budget. Some of our industrial corporations are spending more money on R & D all by themselves than is being spent in all branches of education combined.

It is true, of course, that a few organizations are carrying on notable experimental work in the educational field.

The Ford Foundation and its allied groups are doing a remarkable job in exploring the frontiers of teaching. Typical of their imaginative approach is the recently announced airborne educational television project in which programs will be relayed by plane to a six-state area of the Midwest.

Another example of worthwhile educational experimentation is to be found in my own home community of Greenwich, Connecticut. Recently, Greenwich joined forces with the neighboring areas of Westport, New Canaan and Darien to initiate a joint Research and Development project. The four participants are seeking a grant from one of the foundations to get the program off the ground. Once it is under way, they plan to allot a certain percentage of their annual budgets to finance it.

Still another example of experimentation is the Center for Instructional Television which, I am happy to report, RCA has helped to establish at New York University this fall. The main purpose of this Center is to conduct research and development on the most effective ways of using TV as a teaching tool, especially in uniting the teaching, broadcasting, and graphic arts.

All of these projects are serving a useful function. But they are "islands of experimentation" at a time when we need not islands but entire continents. We need, above all, a broad blueprint.

We need scientific answers to questions which are fundamental to the whole purpose and process of learning — questions relating to the best use of teachers, the best use of facilities, and the most satisfactory curricula.

We need a broad plan of approach to bring into being all the good things made possible by modern technology — especially closed-circuit TV. The present experiments, I think, are lacking in two things.

One is scope. We must learn to think in terms of state-wide and region-wide programming instead of strictly local operations.

Another lack is a real union of the teaching, broadcasting and graphic arts. We must provide means whereby students may move through the educational process in accordance with their ability, and we must provide the greater individual counseling so sorely needed in this technological age.

To achieve these aims, it is my proposal that we undertake a full-scale Research and Development effort in education, on both the local and the national levels.

The program would concern itself with both short-range and long-range problems and objectives.

The short-range aspect would deal with immediate steps that could be taken to broaden our educational advance.

The long-range aspect would deal with our educational needs a decade or two hence, when the children born in the "baby boom" of the 1940's will begin to have children of their own and school enrollments will soar still higher.

To finance such a program of Research and

Development, I propose that each state and locality set aside no less than 2 per cent of its education budget each year.

On the basis of an aggregate education budget of \$20 billion, this would amount to some \$400 million. This may seem tiny in comparison with the sums spent by industry and defense. But it is enormous in contrast to the \$20 million — about one-tenth of one per cent of our overall school budget — now being spent on educational research.

Can we afford such a Research and Development program in education?

I would suggest that a far more reasonable question would be: Can we afford to go on any longer without it?

Walter Lippmann put the matter clearly and concisely when he said:

"We must measure our educational efforts as we do our military efforts. That is to say, we must not measure by what would be easy and convenient to do, but by what it is necessary to do in order that the nation may survive and flourish. We have learned that we are 'rich enough to defend ourselves whatever the cost.' We must now learn that we are quite rich enough to educate ourselves as we need to be educated."

Over the long run, I am confident that research in education would pay for itself many times over — just as research in industry has done.

Let me give you an example of how this might work out in practice. Over the past decade, the annual per-pupil cost of running our public schools has increased by more than 70 per cent. Under conventional methods of instruction, the prospects are that this rise will continue because the cost of instruction goes up almost in direct proportion to the number of students.

However, even the preliminary research that has been done on the economics of classroom television, suggests strongly that once a break-even point is reached — at about 200 to 250 students — the per pupil costs decline sharply.

A study conducted by the Southern Regional Education Board — covering some 300 colleges and universities in sixteen states — showed that the cost of televised instruction would run about \$2.80 per student semester hour, compared with the present cost of \$12 to \$18 for conventional instruction.

It is my feeling that additional research could lead to even greater economies in this area. But, above all, the quality of education could be greatly enhanced.

In a Research and Development program such as I have proposed, you members of the educational broadcasting fraternity could play a vital role. For you have in your hands the most potent means of communication between educators and the public. You can bring to your own communities a vivid awareness of the problem of quality and the means of solving it.

VI. SUMMARY AND CONCLUSION

The quality of education can be greatly upgraded by modern technology, while costs can be lowered and the increase in students can be taken care of at the same time.

The advent of new electronic tools, especially closed-circuit TV and its future derivatives, makes possible an advance in methods of education comparable to that made possible by the invention of the printing press in the Fifteenth Century.

Indeed, it is an advance which can be even greater than the development of the atomic

reactor. The atomic reaction is an explosion of a material kind. The education explosion, which can be made possible by our new electronic tools, is an explosion in thinking — affecting men's minds.

The prime needs to accomplish this advance are: (1) broader scope in the concept and the application of educational electronics; and (2) a combining of the three arts — teaching, broadcasting and graphics.

Present experiments must be drawn upon to lay out a broad business and research program to get adoption of plans for areas large enough to permit fundamental advances.

The need for greatly enlarged expenditures for research in education itself is stressed by the increasingly large number of basic questions that are urgently demanding answers.

In view of all these factors and the present critical situation in education, I therefore propose that:

1. Plans for much broader use of educational television be drawn up for, say, a state or group of states.
2. A tape library of courses by distinguished teachers be created to support such a system. This scope is needed in order to demonstrate the great benefits of educational TV in visual illustration of a magnitude too great for a single classroom to undertake.
3. The three arts — teaching, broadcasting and graphics — be united in the creation of the tapes.
4. A library of follow-up books to supplement the tapes be developed.
5. An R & D fund be set up by all educational units so that advances may go on apace.
6. Other tools of educational automation be brought into existence as quickly as possible.

The task calls for bold experimentation and imaginative new approaches across the whole broad range of education, supported by a very considerable original outlay of money to put an educational television system into being. The funding and implementation of these programs must come from a close collaboration between the localities and the states.

As the authoritative Rockefeller Report on Education pointed out recently: "Such innovations as the teacher aide and television should not be thought of as stopgap measures to surmount the immediate teacher shortage, but as the beginnings of a long overdue revolution in teaching techniques."

Major advances in education have a way of occurring in cycles of thirty years or so. For example, the 1830's saw the acceptance of community responsibility for public education and the beginning of systematic teacher training programs.

The 1860's witnessed the extension of public responsibility to the high schools and the development of land-grant colleges.

In the 1890's there came the great widening of the college curricula and the establishment of the kindergarten.

The 1920's and 1930's saw broad acceptance of John Dewey's philosophy of learning through experimentation and practice.

Today, the astonishing advances of technology give promise of effecting reforms fully as significant and far-reaching as any of these, and of raising the quality of education to new heights. An advance of the magnitude of the printing press and educational television comes only once in several centuries.

You, in educational broadcasting, have a priceless new medium for the communication of knowledge and for upgrading educational

levels in many areas. This should make the challenge of quality all the more meaningful to you.

"There is a tide in the affairs of men," wrote Shakespeare, "which, taken at the flood, leads on to fortune."

Such a tide is running now in education. It is up to us to take advantage of it — for the welfare of our children and for the future of our country.



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